CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

TENTATIVE ORDER NO. R9-2009-004

WASTE DISCHARGE REQUIREMENTS
FOR THE
GREGORY CANYON LTD.
GREGORY CANYON LANDFILL
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. **DISCHARGER.** Gregory Canyon Limited, hereinafter the Discharger, a California limited liability company, submitted a Joint Technical Document ("JTD") containing a Report of Waste Discharge (ROWD) dated June 4, 2003, and applied for waste discharge requirements to construct and operate the Gregory Canyon Landfill, a new municipal solid waste landfill having a design capacity of 46 million cubic yards (or 31.1 million tons). The JTD was deemed complete on March 1, 2005.

2. **FACILITY LOCATION.** The Gregory Canyon Landfill will be located in Sections 4 and 5, T10S, R2W; and Sections 32 and 33, T9S, R2W from the San Bernardino Baseline Meridian (SBB&M). The site is located approximately three miles east of Interstate 15, and two miles southwest of the community of Pala, California. A location map is provided in **Attachment No. 1** to this Order.

3. **WASTE DESCRIPTION.** Wastes proposed to be disposed at the Gregory Canyon Landfill include: putrescible and non-putrescible solid and semi-solid wastes, commercial waste, industrial wastes, construction and demolition wastes, treated wood, sewage sludge, contaminated soil, decommissioned waste, and other nonhazardous or inert waste.

4. **THREAT TO WATER QUALITY.** Municipal solid wastes (MSW), and their degradation products (e.g., landfill gases), contain a wide variety of inorganic and organic constituents in concentrations that present a significant threat to water quality in the San Luis Rey River watershed, if those wastes are not properly managed by the Discharger.

5. **LEGAL AUTHORITY.** This Order is issued pursuant to the California Water Code (Division 7 commencing with §13000) and implements the: (1) federal Resource Conservation and Recovery Act (RCRA), including regulations found in the Code of Federal Regulations, Title 40, Part 258 (hereinafter CFR Title 40, Part 258) adopted by the U.S. Environmental Protection Agency (USEPA) implementing requirements of RCRA Subtitle

D; (2) regulations and policies adopted by the State Water Resources Control Board (SWRCB) in California Code of Regulations (CCR) Titles 23 and 27, and SWRCB Resolution No. 93-62; and (3) applicable provisions of the California Health and Safety Code Division 20, Chapter 6.5 (Hazardous Waste Control).

6. **LOCAL HYDROGEOLOGY.** The overall direction of groundwater flow within Gregory Canyon is to the north, toward the alluvial aquifer and surface waters in the San Luis Rey River. The local hydrogeology of Gregory Canyon includes an alluvial aquifer and a fractured bedrock aquifer.

   a. **Alluvial Aquifer.** In the lower area of Gregory Canyon, a thin veneer of unconsolidated residual soils, colluvial, and alluvial deposits covers a substrate of weathered tonalite. Topsoils vary in thickness from six inches to three feet and are composed of silty sand, silty sand with clay, and silty sand with cobbles and boulders.

   b. **Fractured Bedrock Aquifer.** The upper area of Gregory Canyon is comprised of two distinct bedrock units:

      i. An upper weathered bedrock unit that contains weathered igneous rocks (*i.e.*, tonalite and leucogranodiorite); and

      ii. An underlying unweathered fractured bedrock unit that contains fractured igneous rocks (*i.e.*, tonalite and leucogranodiorite) forming the basement rock of most of the canyon.

7. **GROUNDWATER USE.** Approximately 17 domestic wells and 31 irrigation wells are located within one mile of the Gregory Canyon Landfill. The majority of irrigation wells are located in the alluvial basin of the San Luis Rey River where orchards exist in Rice and Couser Canyons.

8. **COMPLIANCE WITH FEDERAL SITING REQUIREMENTS.** The CFR Title 40, Part 258, Subparts B, D and E contain applicable location restrictions, design criteria, and water quality monitoring requirements, respectively, for the Gregory Canyon Landfill. The location of the Gregory Canyon Landfill is not restricted pursuant to the location restrictions of CFR Title 40 Part 258, Subpart B.

9. **CLASSIFICATION OF UNIT.** The Gregory Canyon Landfill is classified as a Class III Waste Management Unit (WMU) based on the geologic siting criteria and construction standards, in accordance with CCR Title 27 §20240 and §20260.

10. **CONTAINMENT STRUCTURE.** As a containment structure, construction of a double composite liner, a primary leachate collection and removal system (LCRS), secondary LCRS, and a subdrain is reasonable and appropriate for the protection of water quality.

a. **DOUBLE COMPOSITE LINER.** The JTD includes the following design for a double composite liner system at the Gregory Canyon Landfill:

Bottom Liner Design (from top to bottom)

(i). Minimum 24-inch thick protective soil cover layer (operations layer)
(ii). 12 ounce non-woven geotextile
(iii). 12-inch thick primary LCRS gravel layer (including a dendritic leachate collection piping system)
(iv). 16 ounce non-woven geotextile
(v). 80-mil high density polyethylene (HDPE) geomembrane (textured on both sides)
(vi). Non-woven geosynthetic clay liner (GCL)
(vii). 60-mil HDPE geomembrane (textured on both sides)
(viii). 16 ounce non-woven geotextile
(ix). 9-inch minimum thickness gravel or equivalent secondary leak detection/drainage layer (including a dendritic leachate collection piping system)
(x). 16 ounce non-woven geotextile
(xi). 60-mil HDPE geomembrane (textured on both sides)
(xii). 24 -inch thick layer of low hydraulic conductivity material (less than 1×10^{-7} cm/sec)
(xiii). 12 ounce non-woven geotextile

Sideslope Liner Design (from top to bottom)

(i). Minimum 24-inch thick protective soil cover layer (operations layer)
(ii). 16 ounce non-woven geotextile
(iii). 80-mil HDPE geomembrane (single-sided textured, textured side down)
(iv). Non-woven GCL
(v). 60-mil HDPE geomembrane (textured on both sides)
(vi). 24 -inch thick layer of low hydraulic conductivity material (less than 1×10^{-7} cm/sec)

b. **PRIMARY LEACHATE COLLECTION AND RECOVERY SYSTEM (LCRS) – BOTTOM.** The primary LCRS will be comprised of a one-foot thick continuous gravel blanket (constructed above a 16 ounce non-woven geotextile overlying the 80-mil bottom

geomembrane textured on both sides) and an integrated dendritic network of 6 inch slotted HDPE drainage pipes made up of lateral collectors and a mainline pipe to convey the leachate from the WMU to the leachate collection sump. The LCRS conveyance pipes will be placed in V-shaped trenches filled with gravel and constructed within the top of the liner system. To minimize the potential for clogging and bio-fouling, 85 percent of the gravel will be larger than the diameter of the perforations in the pipe.

c. **PRIMARY LEACHATE COLLECTION AND RECOVERY SYSTEM (LCRS) – SIDESLOPES.** The LCRS for the sideslopes will be comprised of gravel pipe collectors wrapped with a geotextile filter fabric placed on the interior benches along the slopes. Slotted HDPE pipe will be placed on the interior benches to allow for collection of leachate and conveyance of the liquid to the LCRS mainlines. The bench piping system will be connected to the bottom area LCRS network. The dendritic laterals and bench collection LCRS piping will convey the leachate into a mainline down the center of the landfill.

d. **SECONDARY LCRS.** The secondary LCRS will be comprised of a 9 inch thick continuous gravel blanket (constructed above a 16 ounce non-woven geotextile overlying the 60-mil bottom geomembrane textured on both sides) and an integrated dendritic network of 4 inch slotted HDPE drainage pipes. The secondary LCRS will also function as a leak detection system, and an engineered alternative to the prescriptive requirements for vadose zone monitoring pursuant to CCR Title 27 §20415(d). The proposed leak detection/drainage layer located between the upper and lower composite liner systems is intended to transmit any liquid in the layer by gravity to the LCRS tank by way of an inspection/sampling sump. Leachate collected in the LCRS tank will be transported off-site for treatment and disposal.

e. **SUBDRAIN SYSTEM.** The subdrain system will be placed beneath the composite liner and will consist of a one-foot thick gravel blanket and gravel filled trenches with slotted collector pipes in the floor areas. The subdrain system helps to ensure long-term integrity of the engineered liner system, by providing adequate separation between the bottom of the double composite liner system and the groundwater beneath the WMU. Groundwater collected in the subdrain would be discharged to one of the two 10,000 gallon above ground storage tanks for the Gregory Canyon Landfill.

Since the design capacity of the subdrain system greatly exceeds the storage capacity for water collected from the subdrain, a

requirement that the Discharger develop a contingency plan for testing and management of volumes of groundwater in excess of 10,000 gallons in one day is reasonable and appropriate for this Order. The groundwater collected in the subdrain will be treated at the landfill (as necessary) prior to discharge or transported offsite for disposal.

11. **OPERATIONS LAYER.** The operations layer for the Gregory Canyon Landfill will consist of a maximum two-foot thick sand or soil layer. The operations layer is placed over the liner system to provide protection of the double composite liner system against any damage *i.e.*, by puncture, from the disposal of municipal solid waste, and provide long-term protection for the LCRS against clogging (due to the accumulation of fine grained soils).

12. **BORROW/STOCKPILE SOILS:** Excavated colluvium and weathered bedrock will be stockpiled for use during the operation and closure of the landfill in Borrow/Stockpile Areas A and B (shown on **Attachment No. 2** to this Order). Slope stability analyses for these two areas resulted in calculated static factors of safety ranging between 1.5 and 1.9 for six critical cross-sections. These values equal or exceed the factor of safety of 1.5 required under CCR Title 27. The management of borrow/stockpile soils includes two components:

    a. Borrow/Stockpile Area A is approximately 22 acres and will be located west of the WMU footprint and will be excavated to depths ranging between 10 to 65 feet below the existing ground surface. Approximately 1.3 million cubic yards (mcy) of soil will be excavated and stockpiled in Borrow/Stockpile Area A. Area A will be graded to promote proper drainage and re-vegetated with native plant species. The JTD indicates that the material in Borrow/ Stockpile Area A will not be used again until operational year 25 when it will be used for daily cover.

    b. Borrow/Stockpile Area B is approximately 65 acres and will be located immediately southwest and adjacent to the WMU footprint. Borrow/Stockpile Area B will drain southwest into a natural drainage course. A desilting basin will be constructed at the western end of Borrow/Stockpile Area B to minimize the flow of silt from the borrow/stockpile area. Approximately 3.2 mcy of soil will be stored in Borrow/Stockpile Area B.

    Construction and operation of the borrow/stockpile areas, including the drainage facilities, will be conducted in accordance with the Best Management Practices (BMPs) developed as part of the Storm Water Pollution Prevention Plan (SWPPP).

13. **ALTERNATIVE DAILY COVER:** Approximately 8.4 mcy of soil will be available for use as on-site cover, leaving a shortfall of 4.3 mcy over the life of the project, including final closure. This shortfall will be offset by the use of Alternative Daily Cover (ADC). ADC will be used at the Gregory Canyon Landfill to reduce refuse-to-daily/intermediate cover ratios from 4:1 to 7:1. Geosynthetic blankets will be used initially in conjunction with soil. Geosynthetic blankets will be used as specified in CCR Title 27 §20690(b)(1).

14. **CONTINGENCY WATER TREATMENT SYSTEM:** The purpose of the contingency water treatment system is to provide a groundwater treatment facility in the event of a release of waste constituents from the Unit. The contingency water treatment system will consist of a granulated active carbon (GAC) system and a reverse osmosis (RO) system. The GAC system will treat volatile organic constituents and will consist of an influent tank, a pre-filtration system, two 2,000-pound GAC vessels and an effluent surge tank. The GAC system is expected to operate under pressure and treated water will be transferred directly to an effluent surge tank or an effluent transfer pump. The treated effluent will then be pumped to a 50-gallon per minute RO system that will remove total dissolved solids and/or volatile organic constituents (VOCs). Treated water will be stored in a tank and may be used on-site or discharged to the San Luis Rey River. Brine from the RO system will be collected in a tank and hauled offsite to an appropriate facility for disposal.

15. **INDUSTRIAL AND CONSTRUCTION STORM WATER DISCHARGES:** The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of Order No. 1997-03-DWQ, National Pollutant Discharge Elimination System (NPDES) Permit No. CAS000001 (General Permit), *Waste Discharge Requirements (WDRs) for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities* and Order No. 1999-08-DWQ National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, *Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity*. A copy of the SWPPP is attached to this Order, but is expected to be amended pursuant to Order Nos. 1997-03-DWQ and 1999-08-DWQ whenever there is a change in operations which may affect the discharge of pollutants to waters of the United States as required by that Permit.

16. **STORM WATER CONVEYANCE SYSTEM:** The storm water conveyance system is in compliance with precipitation and drainage control requirements contained in CCR Title 27 §20365. The system for the Gregory Canyon Landfill consists of:

    a. A surficial conveyance system that collects and conveys storm water from undisturbed areas. The system for conveying water from

undisturbed areas will collect and convey run-on from the surrounding areas as well as runoff from the undisturbed areas within the WMU footprint. This system will consist of above-ground perimeter drainage channels (*i.e.*, the eastern and western perimeter channels) and energy dissipaters; and

b. A subsurface conveyance system that collects and conveys storm water from the disturbed areas of the WMU. The storm water conveyance system for the disturbed area will include deck and slope area grading, earthen berms, and downdrains designed to discharge into buried perimeter drainage pipes, which empty to the desilting basins.

c. Two desilting basins to be located east and west of the ancillary facilities. The desilting basins are designed to control the rate of storm water discharge and the amount of silt/fines discharged from the facility. Both of the desilting basins (east and west basins) will discharge directly into the San Luis Rey River.

17. **GROUNDWATER DETECTION MONITORING LIMITATIONS.** Groundwater monitoring must comply with the performance requirements of CCR Title 27 [as required by CCR Title 27 §20415(b) and §20420(b)] and CFR Title 40 Part 258 [§258.51(a)(2)] for detecting a release/discharge of waste constituents from the WMU into the groundwater within the fractured rock aquifer.

18. **SURFACE WATER MONITORING LIMITATIONS.** The surface water monitoring network must comply with the applicable performance requirements [CCR Title 27, §20415(c)(2)(B)], in particular, the requirement that the system provides the "best assurance of the earliest possible detection of a release from the Unit".

19. **REPLACEMENT WATER CONTINGENCY PLAN.** Development by the Discharger of a contingency plan to provide replacement water to all private and public well owners, and other parties affected by the release of wastes or waste constituents from the WMU is appropriate because:

a. There will always be some level of uncertainty associated with detecting a release from the WMU (**Finding 17** of this Order), by the Detection Monitoring Program that must comply with applicable State [CCR Title 27 §20415(b)(1)(B) and §20420(b)] and federal [CFR Title 40 §258.51(a)(2)] performance standards for groundwater detection monitoring systems at MSW landfills.

b. The San Luis Rey River watershed contains sensitive beneficial uses of groundwater.

c. The groundwater resources in the Pala Basin (HSA 903.21) may qualify for designation as a "sole source aquifer" (Basin Plan page 4-102); although the Regional Board is not currently aware of a formal designation being made by the USEPA.

d. The San Luis Rey Municipal Water District, the City of Oceanside, and the County Water Authority have plans and objectives for the long-term groundwater development in the San Luis Rey watershed.

20. **WATER QUALITY CONTROL PLAN.** The **Water Quality Control Plan for the San Diego Basin (9)** (hereinafter Basin Plan), was adopted by this Regional Board on September 8, 1994, and subsequently approved by the SWRCB on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the Regional Board and approved by the SWRCB. The Basin Plan designates beneficial uses, narrative and numerical water quality objectives, and waste discharge prohibitions that are applicable to the discharges regulated under this Order.

21. **BENEFICIAL USES AND WATER QUALITY OBJECTIVES.** The Gregory Canyon Landfill is located in the Pala Hydrologic Subarea (903.21) of the Monserate Hydrologic Area (HA 903.20) of the San Luis Rey River watershed. The Basin Plan establishes the designated beneficial uses of surface water and groundwater resources (see Tables 2-2 and 2-5 in the Basin Plan),and the applicable water narrative and numeric water quality objectives (see Chapter 3 in the Basin Plan) for the protection of beneficial uses of water resources in the Pala Hydrologic Subarea.

22. **CALIFORNIA ENVIRONMENTAL QUALITY ACT**. On May 31, 2007, the County of San Diego certified a Revised Final Environmental Impact Report (consisting of the 2003 Draft EIR and the Revised Partial EIR) for the Gregory Canyon Landfill in accordance with the California Environmental Quality Act (CEQA) Public Resources Code §21000 *et seq.*).[1] The County of San Diego is the lead agency for purposes of CEQA. The Regional Board is a responsible agency for purposes of CEQA. Consistent with CEQA Guidelines section 15096, the Regional Board has considered the EIR prepared by the County of San Diego and has considered the environmental impacts of the project. The EIR did not identify any significant effect on the environment with respect to water quality. The EIR stated that the Discharger must comply with waste discharge requirements issued by the Regional Board. Because the EIR did not identify significant environmental impacts with respect to water quality, the CEQA Guidelines do not require the Regional Board to make findings under CEQA Guidelines section 15091. This Order requires

[1]The EIR has been challenged in court, but is now a final document. See Staff Report for details about the court proceedings.

compliance with all applicable water quality requirements, including Title 27 CCR Division 2 and the Basin Plan and compliance with those requirements will be protective of water quality. The project as approved by the Regional Board will not have a significant impact on water quality.

23. **FINANCIAL ASSURANCES.** The Discharger is required and intends to comply with applicable financial assurance requirements of CCR Title 27 §22112(a) by ensuring that the funds associated with the financial assurances, established pursuant to **Provision H.4** of this Order, can be made directly available to the Regional Board when it finds that the Discharger has failed or refuses to implement closure, post-closure monitoring and maintenance, or corrective actions in response to a reasonable foreseeable release from the Gregory Canyon Landfill. Financial assurance instruments that do not provide the Regional Board direct access to funds are unacceptable.

24. **ANNUAL FEES.** The discharge of waste or waste constituents into groundwater or surface waters could cause the long-term loss of the designated/actual municipal and domestic (MUN), and agricultural (AGR) beneficial uses of water resources. The Gregory Canyon Landfill is ranked as Threat to Water Quality (TTWQ) category "1". The complexity (CPLX) ranking is established at category "B", which is the complexity ranking required for Class III landfills (per factors established in CCR Title 23 §2200). As an operating/active unit, the Gregory Canyon Landfill is required to pay annual fees (tipping fees) pursuant to the Public Resources Code §48000 *et seq.* and shall not be required to pay the annual fee imposed pursuant to subdivision (d) of §13260 of the Water Code (or CCR Title 23 §2200) for the same discharge.

25. **WATER QUALITY CERTIFICATION.** Where the construction of the waste management unit (*i.e.*, landfill) is subject to requirements of the federal Clean Water Act §404, the project is also subject to the Clean Water Act §401 - Water Quality Certification standard.

    a. Pursuant to 33 CFR § 323.2, the term "discharge of fill material" means the addition of fill material into waters of the United States (U.S.). The term generally includes, without limitation, the following activities: Placement of fill that is necessary for the construction of any structure in a water of the United States; the building of any structure or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection and/or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for structures such as sewage treatment facilities, intake and outfall

pipes associated with power plants and subaqueous utility lines; and artificial reefs."

b. Gregory Canyon, Ltd. submitted an application for 401 Water Quality Certification on September 29, 2005 for the discharge of fill material (3 bridge piers) to surface waters of the U.S. (San Luis Rey River). The project will result in the discharge of fill into 0.370-acre surface waters of the U.S. as follows:

Surface waters of the U.S. – San Luis Rey River	Permanent Impacts (Acre)	Temporary Impacts (Acre)	Total Impacts (Acre)
Vegetated surface waters (Southern willow scrub)	0.002	0.368	0.370

c. Pursuant to the Water Code §13050(d), waste "includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal ". The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

d. Pursuant to the Water Code §13050(e), waters of the State is defined as "any surface water or groundwater, including saline waters, within the boundaries of the State."

e. The Corps of Engineers has determined the ephemeral stream in the bottom of Gregory Canyon is not a surface water of the U.S. Waters of the U.S. is a subset of waters of the State. The Regional Board has determined that the ephemeral stream in the bottom of Gregory Canyon is considered (non-Federal) surface waters of the State.

f. Gregory Canyon, Ltd. submitted an Application/Report of Waste Discharge on September 29, 2005 for discharge of waste (a landfill and associated infrastructure) to surface waters of the state. The project will result in the discharge of waste into 0.955-acre surface waters of the state as follows:

Surface waters of the State –	Permanent and Temporary Impacts (Acre)
Vegetated surface waters (Southern willow scrub)	0.030
Vegetated surface waters (disturbed Southern willow scrub)	0.400
Vegetated surface waters (Cottonwood-willow riparian forest)	0.200
Open channel	0.200
Ephemeral stream (Gregory Canyon stream)	0.125
Total Impacts to surface waters of the State	0.955

g. The mitigation for proposed project impacts will consist of restoration and enhancement of 4.0 acres of surface waters of the U.S. and the state, consisting of 3.2-acres of Southern willow scrub and 0.8-acre of cottonwood-willow riparian forest in the nearby San Luis Rey River floodplain (Pala hydrologic subarea 903.21). The overall mitigation ratio will be 3.02:1 (mitigation to impacts).

h. Measures to mitigate for impacts to water quality and beneficial uses resulting from the placement of fill in surface waters of the state are contained in Section F. Fill Specifications of this Order.

i. The *Restoration and Enhancement Plan* dated May 23, 2008 (prepared by URS and submitted by Gregory Canyon Ltd.) proposes measures to compensate for impacts to surface waters of the U.S. and/or State associated with the discharge of fill and waste material.

j. This Order specifies waste discharge requirements (WDRs) that are necessary to adequately address impacts to water quality standards resulting from the filling of surface waters of the U.S. and/or State, to meet the objectives of the State Wetlands Conservation Policy (Executive Order W-59-93), and to accommodate and require appropriate changes over implementation of the project and its construction.

k. The Discharger has avoided and minimized impacts to surface waters of the U.S. consistent with the requirements of the Basin

Plan, and has offered compensatory mitigation in accordance with the State Wetlands Conservation Policy (Executive Order W-59-93). The project, as described in this Order, will not result in State Water Quality Standards being exceeded.

l. Adoption of this Order acts as Clean Water Act §401 Water Quality Certification (Certification No. 05C-095) that the proposed discharge from the Gregory Canyon Landfill will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicants' project description and (b) on compliance with all applicable requirements of the Regional Board's Basin Plan.

26. **RECYCLED WATER.** The proposed project will make use of recycled water consistent with the goals of Water Code, Division 7, Chapter 7, Water Recycling Law, and with the standards, policies, and regulations established in the Basin Plan for the achievement of water quality objectives.

27. **LOCAL AGENCY APPROVAL.** The Regional Board has not been notified [pursuant to CCR Title 27 §21720(d)][2] that all requisite approvals from all local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved use of the site for discharges of waste to land.

28. **WATER RESOURCE FACTORS.** The Regional Board has considered all water resource related environmental factors associated with the discharge of wastes associated with the Gregory Canyon Landfill.

29. **PUBLIC PARTICIPATION.** The Regional Board has notified interested agencies, and all interested parties known to the Regional Board, of its intent to prescribe WDRs and Section 401 Water Quality Certification for the Gregory Canyon Landfill.

a. On May 19, 2005, the Regional Board convened a public workshop to acquire public input regarding the Gregory Canyon Landfill. In

[2] WDRs for new Units shall not be effective until the Regional Board is notified that all local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved use of the site for discharges of waste to land [CCR Title 27 § 21720(d)].

addition, the Regional Board has complied with the applicable public participation requirements of CCR Title 27, §21730.

b. In a public hearing convened on October 14, 2009, the Regional Board in a public meeting heard and considered all public comments pertaining to the Gregory Canyon Landfill.

IT IS HEREBY ORDERED, that Gregory Canyon Ltd. (hereinafter Discharger) shall comply with the following:

A. PROHIBITIONS

1. The discharge of waste shall not:

   a. Cause the occurrence of coliform or pathogenic organisms in waters of the state;

   b. Cause the occurrence of objectionable tastes and odors in waters of the state;

   c. Cause waters of the state to foam;

   d. Cause the presence of toxic materials in waters of the state;

   e. Cause the pH of waters of the state to fall below 6.0 or rise above 9.0;

   f. Cause this Regional Board's objectives for waters of the state, as established in the Basin Plan, to be exceeded; or

   g. Cause pollution, contamination or nuisance or adversely affect beneficial uses of waters of the state as established in the Basin Plan.

2. Odors, vectors, landfill gas/vapors, and other nuisances of waste origin that occur beyond the limits of the landfill property boundary are prohibited.

3. The discharge of wastes shall not create conditions that violate any waste discharge prohibitions in the Basin Plan.

4. The discharge of waste to areas of the Gregory Canyon Landfill without a prescriptive liner or engineered alternative liner, except as authorized by WDRs or the terms described in Water Code §13264, is prohibited.

5. The discharge of wastes, which have the potential to reduce or impair the integrity of the containment structure or which, if commingled with other wastes, could produce violent reactions, heat or pressure, fire or explosion, toxic byproducts, or reaction products are prohibited.

6. The discharge of the following wastes into the Gregory Canyon Landfill is prohibited:

   a. The discharge of any hazardous wastes, as defined in CCR Title 22, Division 4.5.

   b. The discharge of liquid or semi-solid waste (*i.e.*, waste containing less than 50 percent solids) other than dewatered sewage or water treatment sludge as described in CCR Title 27 §20220(c).

   c. The disposal of designated wastes, as defined by Water Code §13173 and CCR Title 27 §20210, unless otherwise authorized by this Order.

   d. The disposal of wastes containing greater than one percent (>1%) friable asbestos.

   e. The disposal of shredded automobile bodies, household appliances, and sheet metals (shredder waste).

   f. The disposal of containerized liquids.

   g. The disposal of decommissioned material/wastes from decommissioned sites into Class III and unclassified WMUs.

   h. The disposal of any other waste that fails to satisfy the conditions prescribed in Sections B and C of this Order.

7. The discharge of waste shall not exceed the acreages, volumes, and locations specified in Finding Nos. 25.b, 25.f, and 25.g.

8. The project shall not cause significant adverse impacts upon the quality of surface waters in a local, state, or federal wildlife preserve or sanctuary, or other surface waters of significant local, regional, statewide, or national importance.

B. GENERAL DISCHARGE SPECIFICATIONS[3]

[3] For wastes other than recycled water

1. The discharge of wastes shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point.

2. Only nonhazardous wastes and inert wastes as defined in CCR Title 27 §20220 and §20230 may be discharged into the WMU.

3. The discharge of wastes shall be confined to the designated disposal area, underlain by the liner system prescribed by **Landfill Construction Specification E.6** of this Order.

4. The Discharger is responsible for accurate characterization of wastes [in compliance with CCR Title 27 §20200(c)], including: determinations of whether or not wastes will be compatible with containment features and other wastes, and whether or not wastes are required to be managed as hazardous wastes under CCR Title 22, Division 4.5 §66300 *et seq.*

5. The discharge of solid waste containing free liquid or moisture shall not cause the moisture holding capacity of the WMU to be exceeded.

C. DISCHARGE SPECIFICATIONS FOR SPECIFIC TYPES OF WASTE

1. **TREATED WOOD.** The Discharger shall manage and dispose of treated wood in accordance with all requirements of California Health and Safety Code §25143.1.5 and §25150.7.

2. **SEWAGE SLUDGE.** Unless the California Department of Toxic Substances Control (DTSC) determines that the waste must be managed as a hazardous waste, dewatered sludge disposed into the WMU shall contain at least 20 percent solids (by weight) if primary sludge, or at least 15 percent solids if secondary sludge, mixtures of primary and secondary sludge, or water treatment sludge. A minimum solids-to-liquid ratio of 5:1 by weight shall be maintained to ensure that the co-disposal will not exceed the initial moisture holding capacity of the non-hazardous solid waste [per CCR Title 27 §20220(c)].

3. **LANDFILL LEACHATE AND CONDENSATE.** The discharge of leachate or landfill gas condensate must comply with CCR Title 27 §20340(g), CFR Title 40 §258.28, and the following conditions:

   a. The landfill gas condensate or leachate is being returned to the WMU that produced it; and

   b. Any discharge of leachate or landfill condensate wastes must be into a WMU that is equipped with a prepared foundation/subgrade

and waste containment system meeting the requirements of **Landfill Construction Specifications E.5 and E.6** of this Order.

4. **CONTAMINATED SOILS.** The discharge of contaminated soils at the WMU shall comply with the following:

   a. Samples of waste soils shall be collected in accordance with sampling guidelines set forth in the 1996 edition of *"Test Methods for Evaluating Solid Waste, Physical / Chemical Methods, SW-846"*, USEPA. At a minimum, for quantities of soil less than or equal to 500 cubic yards, four samples shall be collected per 100 cubic yards of waste soil. For quantities of soil between 500 to 5,000 cubic yards, an additional sample shall be collected for every 500 cubic yards.

   b. Waste soils may be utilized for daily landfill cover if approved for such use by the appropriate agencies.

   c. All soil wastes received for disposal at the Gregory Canyon Landfill must be certified as California non-hazardous pursuant to the criteria found in CCR Title 22, Division 4.5.

   d. The Gregory Canyon Landfill may accept soil wastes containing the following waste constituents: petroleum hydrocarbons, organic and inorganic compounds, metals, and pesticides, which could pose a threat to water quality if discharged in an uncontrolled manner. In addition, those waste soils must also meet all of the following criteria for disposal at the WMU:

      (1) Soil wastes, containing concentrations of metals and pesticides, organic and inorganic compounds, shall not exceed the applicable hazardous waste classifications as determined using the waste extraction test (WET) (per CCR Title 22 §66261.24, as amended).

      (2) Soil wastes, containing non-hazardous concentrations of metals, pesticides, organic and inorganic compounds, shall not exceed maximum concentrations of contaminants using the Toxicity Characteristic Leaching Procedure (TCLP) analysis (per CCR Title 22 §66261.24, as amended).

      (3) The concentrations of metals in wastes discharged into the WMU shall be below the applicable threshold concentrations for non-hazardous wastes established in Division 4.5 of CCR Title 22.

(4) The maximum concentration levels for waste soils containing non-hazardous concentrations of pesticides, and organic and inorganic compounds are contained in **Attachment Nos. 3 and 4** to this Order and shall be used to determine if waste soils containing the above-referenced constituents are acceptable for disposal.

(5) The following maximum concentration limits shall be used to determine if waste soils containing petroleum hydrocarbons are acceptable for disposal into the Unit.

Petroleum Hydrocarbon Contaminant	**Maximum Concentration Limits**	
Gasoline and lighter end hydrocarbons (C_4 -C_{12})	1,000 ppm TPH	1,000 -5,000 ppm TPH w/RCI and 96 hour bioassay
Diesel fuel, Kerosene Oil, Jet Fuel, (C_8-C_{22}) heavy end hydrocarbons	3,000 ppm TPH	3,000 -15,000 ppm TPH w/RCI and 96 hour bioassay
Hydraulic Oil, Cutting and Grinding Oil, Virgin Motor Oil, Waste Oil (C_8-C_{40} heavy end hydrocarbons)	3,000 ppm TRPH	3,000 -15,000 ppm TPH w/RCI and 96 hour bioassay

ppm = in units of mg/kg
TPH - Total Petroleum Hydrocarbon
TRPH - Total Recoverable Petroleum Hydrocarbon
RCI - Hazardous Waste Criteria for Reactivity, Corrosivity, Ignitability and 96-Hour Acute Bioassay as established by CCR 22

e. Test Methods for Waste Soils Containing Petroleum Hydrocarbons:

The following test methods shall be performed for waste soils containing Petroleum Hydrocarbons:

Petroleum Constituent	**TPH (8015B) Gas**	**TPH (8015B Diesel**	**TRPH (EPA 418.1)**	**BTEX (8021B)**	**Lead (TCLP)**	**Metals (Cd, Cr, Pb, Ni, Zn), OX, and PCBs**	**Semi-Volatile Organics (8270C or EPA 625)**	**Volatile organics (8260B)**	**Metals (CAM 17), and PCBs**
Leaded Gasoline	■			■	■				
Unleaded gasoline	■			■	*				
Kerosene Oil		■		■					
Jet Fuel		■		■					
Diesel Fuel		■		■					
Hydraulic Oil		■	■	■		■			
Cutting and Grinding Oil		■	■	■		■			
Virgin Motor Oil		■	■	■			■		
Waste Oil		■	■	■			■	■	■

BTEX – Benzene, Toluene, Ethylbenzene and Xylene
PCBs- Polychlorinated Biphenyls
* with documentation that only unleaded gas was historically on site

f. Test Methods for Waste Soils Containing Metals and Pesticides

The analyses can include, but are not limited to, the following methodologies:

418.1 (TRPH)
6010 (CAM 17 metals)
7420 (Organic lead)
8015B (Nonhalogenated Volatiles)
8021B (Aromatic and halogenated volatiles)
8081 (Chlorinated pesticides)
8082 (Polychlorinated biphenyls)
8151A (herbicides)
8260B (Volatile Organics - VOC)
8270C (Semi-VOCs)
TCLP Analysis (8 RCRA metals)

5. **RECYCLED WATER.** The discharge and use of recycled water at the Gregory Canyon Landfill shall comply with the following conditions:

a. All recycled water shall be treated in conformance with all applicable provisions of CCR, Title 22, Division 4, Chapter 3 (Water Recycling Criteria) by a Recycled Water Agency regulated with WDRs and, at a minimum, meet disinfected secondary-23 recycled water standards as prescribed by §60307(b).

b. The discharge of recycled water containing waste constituents in excess of the following effluent limitations is prohibited:

Discharge Specifications Based on Groundwater Quality Objectives

Constituent	Units	12-Month Average[a]
Total Dissolved Solids	mg/L	900
Chloride	mg/L	300
Sulfate	mg/L	500
Nitrate Nitrogen (as NO_3)	mg/L	15
Iron	mg/L	0.3
Manganese	mg/L	0.03

[a] The 12-month average effluent limitation shall apply to the arithmetic mean of the results of all samples collected during the current calendar month and the preceding 11 calendar months.

c. Prior to providing recycled water to a new use site, the Discharger shall arrange for a complete cross-connection shut down test performed by a certified cross-connection specialist of the San Diego County Department of Environmental Health (DEH) in the presence of an adequately trained and qualified designated use site supervisor. This cross-connection shut down test shall be conducted to ensure that the use site is adequately supplied with recycled water and supervised by a qualified staff.

d. The Discharger shall designate a recycled water supervisor who is responsible for the proper installation, operation, and maintenance of the recycled water system; the prevention of potential hazards; and preservation of the recycled water distribution system plans in "as built" form. Designated recycled water supervisors shall obtain instruction in the use of recycled water from an institution approved by the California Department of Public Health and DEH. Additional guidance regarding recycled water supervisor responsibilities and instruction requirements is provided in Attachments 17 and 18 of the *Recycled Water Plan Check and Inspection Manual* developed by the DEH, which are incorporated herein by reference.

e. All recycled water storage facilities shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour frequency storm.

f. All recycled water storage facilities owned and/or operated by recycled water users shall be protected against 100-year frequency peak stream flows as defined by the San Diego County Flood Control District.

g. Irrigation with disinfected tertiary recycled water shall not take place within 50 feet of any domestic water supply well and/or storage of recycled water within 100 feet of any domestic water supply well unless approved by the Department of Public Health.

h. Impoundment of disinfected tertiary recycled water shall not occur within 100 feet of any domestic water supply well.

i. Irrigation with, or impoundment of, disinfected secondary-2.2 or disinfected secondary-23 recycled water shall not take place within 100 feet of any domestic water supply well.

j. Irrigation with, or impoundment of, undisinfected secondary recycled water shall not take place within 150 feet of any domestic water supply well.

k. Recycled water facilities shall be operated in accordance with best management practices (BMPs) to prevent direct human consumption of reclaimed water and to minimize misting, ponding, or runoff. BMPs shall be implemented that will minimize both public contact and discharge onto areas not under customer control.

l. All windblown spray and surface runoff of recycled water applied for irrigation onto property not owned or controlled by the Discharger or reclaimed water user shall be prevented by implementation of BMPs.

m. Irrigation with recycled water shall be during periods of minimal human use of the service area. Consideration shall be given to allow an adequate dry-out time before the irrigated area will be used by the public.

n. All drinking fountains located within the approved use area shall be protected by location and/or structure from contact with recycled water spray, mist, or runoff. Protection shall be by design, construction practice, or system operation.

o. Facilities that may be used by the public, including but not limited to eating surfaces and playground equipment, and located within the approved use areas, shall be protected to the maximum extent possible by siting and/or structure from contact by irrigation with recycled water spray, mist, or runoff. Protection shall be by design, construction practice, or system operation.

p. Spray irrigation with recycled water, other than disinfected tertiary recycled water, shall not take place within 100 feet of the property line of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.

q. All use areas where recycled water is used and that are accessible to the public shall be posted with conspicuous signs, in a size no less than 4 inches by 8 inches, that include the following wording and picture in a size no less than 4 inches high by 8 inches wide: "RECYCLED WATER - DO NOT DRINK". The sign(s) shall be of a size easily readable by the public. The prescribed wording should also be translated into Spanish and other appropriate languages and included in the required signs.

r. No physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water.

s. The recycled water piping system shall not include any hose bibs. Quick couplers that are different from that used on the potable water system may be used.

t. The public water supply shall not be used as a backup or supplemental source of water for a recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of §7602(a) and §7603(a) of CCR Title 17 and the approval of the public water system has been obtained. If a "Swivel-ell" type connection is used it must be used in accordance with the provisions of the Department of Public Health Policy Memo 95-004. Approved backflow prevention devices shall be provided, installed, tested, and maintained by the recycled water user in accordance with the applicable provisions of CCR Title 17, Division 1, Chapter 5, Subchapter 1, Group 4, Article 2.

u. All recycled water piping and appurtenances in new installations and appurtenances in retrofit installations shall be colored purple or distinctively wrapped with purple tape in accordance with Chapter 7.9, §4049.54 of the Health and Safety Code.

v. Any backflow prevention device installed to protect the public water system shall be inspected and maintained in accordance with §7605 of CCR Title 17.

D. LANDFILL OPERATION SPECIFICATIONS

1. **METHANE AND OTHER LANDFILL GASES.** Methane and other landfill gases shall be adequately vented, removed from the WMU, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration of waste constituents through the vadose (unsaturated) zone.

2. **LOAD CHECKING PROGRAM.** The Discharger shall implement an approved load checking program in compliance with CCR Title 27 §20870, at the Gregory Canyon Landfill.

3. **WATER USE.** Water used for facility maintenance shall be limited to the minimum volume necessary for dust control and shall only be applied: a) by spraying; b) on covered areas and not on trash; and c) in quantities not to exceed those necessary to reduce immediate dust hazards.

4. **VERTICAL SEPARATION.** The Discharger shall maintain at least 5 feet of vertical separation between the groundwater and waste material at all times.

5. **SURPLUS SOILS.** The discharge or placement of "surplus soils" (*e.g.*, stockpiled soils associated with landfill construction projects, used in landfill operations, or closure of a WMU) shall not cause or contribute to the failure of engineered slopes on cut or fill material, or natural ground, or create adverse impacts upon the integrity or performance of the WMU's foundation, liner system, waste containment structures, or the structures which control leachate, surface drainage, erosion or gas.

6. **SURFACE DRAINAGE.** The following measures shall be implemented to control surface drainage at the WMU:

   a. During the rainy season, the WMU shall be operated and graded to minimize infiltration of precipitation/surface drainage into the WMU, by implementing measures, including, but not limited to, limiting the working face of the landfill to one day of operation at a time. Any precipitation that falls on the working face of the landfill and comes in contact with the waste (contact water) shall be treated as leachate and discharged in accordance with Discharge Specification C.3.

   b. Non-contact surface water runoff within the boundary of the WMU (*i.e.,* precipitation that falls on the WMU) shall be collected by the storm water conveyance system and discharged to the desiltation basins.

   c. Annually, prior to the anticipated rainy season but no later than **October 31**, the Discharger shall implement any necessary erosion control measures, and shall complete any necessary construction, maintenance, or repairs of precipitation and drainage control facilities to prevent erosion, ponding, flooding, or to prevent surface drainage from contacting or percolating through wastes at the WMU. This specification shall not preclude the Discharger from performing maintenance, and repairs necessitated by changing site conditions at any time during the rainy season. By **January 30** of each year, the Discharger shall submit an annual report describing measures taken to comply with this specification.

   d. Surface drainage from outside of the WMU shall be diverted from the Unit via the perimeter storm drain system.

e. Precipitation and drainage control facilities shall be constructed and maintained to effectively divert sheet flow runoff laterally, or via the shortest distance, into the drainage and collection facilities.

f. The Discharger shall not allow the accumulations of surface water (*i.e.,* ponding) or accumulations of groundwater, to cause or contribute to adverse impacts upon the integrity or performance of the WMU's foundation, liner system, or the structures which control leachate, surface water drainage, erosion, or landfill gas.

g. Sediments shall be removed from the desiltation basins whenever the volume of the basin has been reduced by 25 percent of the basin's design capacity.

7. **EROSION CONTROL.** The following measures shall be implemented at the WMU to control erosion:

a. The Discharger must implement and maintain the following Construction BMPs as proposed in the *Storm Water Pollution Prevention Plan for Gregory Canyon Landfill (GCLF).*

b. The Discharger must implement and maintain the following post-construction BMPs as proposed in the *Storm Water Management Plan for GCLF, dated September 22, 2008.*

c. Post-construction BMPs must be installed and functional prior to planned use of project areas.

d. At the time maintenance responsibility for post-construction BMPs is legally transferred, the Discharger must submit to the Regional Board a copy of such documentation.

e. At the time maintenance responsibility for post-construction BMPs is legally transferred, the Discharger must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer specifications.

f. The Discharger assumes responsibility for the inspection and maintenance of all post-construction structural BMPs until such responsibility is legally transferred to another entity.

g. The Discharger or their designated party must inspect and maintain structural BMPs per the manufacturers' specifications, engineering design specifications, and in accordance with the most recent California Storm Water Quality Association guidance.

h. Where surface flows result in erosive flow velocities, erosion control material shall be used for protection of drainage conveyance features. Effective erosion control BMPs shall be implemented on interim bench ditches to control erosion when necessary.

i. Where high surface water flow velocities occur at terminal ends of downchutes or where downchutes cross the landfill cover access roads, effective erosion control, and surface water conveyance BMPs shall be implemented by the Discharger.

j. All areas, including surface drainage courses shall be maintained to minimize erosion.

k. The landfill cover shall be maintained to minimize percolation of liquids through wastes.

8. **LEACHATE COLLECTION AND REMOVAL SYSTEM**

a. The primary LCRS and secondary LCRS shall function without clogging throughout the active life of the WMU and the post-closure maintenance period. The Discharger shall perform annual testing of the primary LCRS, and secondary LCRS, to demonstrate proper operation. Results from the annual testing shall be compared with earlier tests made under comparable conditions [pursuant to CCR Title 27 §20340(d)].

b. Leachate production from the primary LCRS shall not exceed 85 percent of the design capacity of the primary LCRS or sump pump. If leachate generation exceeds this value,and/or if the depth of fluid in the LCRS sump exceed 24 inches, then the Discharger shall immediately cease the discharge of sludge and other high-moisture wastes to the landfill unit and shall notify the Regional Board in writing within **seven days**. Notification shall include a timetable for a corrective action necessary to reduce leachate production.

c. The depth of fluid in any LCRS sump shall be kept at or below six inches, the minimum needed to ensure efficient pump operation.

d. Landfill leachate shall be discharged to an appropriate onsite and/or offsite liquid waste management facility in compliance with all applicable federal, state and local requirements.

e. The Discharger shall collect and remove pumpable liquids in the secondary LCRS sumps to minimize the head on the bottom liner.

E. LANDFILL CONSTRUCTION SPECIFICATIONS

1. **PRECIPITATION AND DRAINAGE CONTROL.** At a minimum, the precipitation and drainage control system shall be constructed to accommodate precipitation from a 24-hour storm with a 100-year return frequency [per CCR Title 27 §20260(c) and Table 4.1: Title 27 - Construction Standards for Units]. All diversion and drainage facilities shall be designed, constructed and maintained to take into account the:

   a. Expected final contours for closed portions of Units including its planned drainage pattern;

   b. Drainage pattern for operating Units at any given time;

   c. Possible effects of the WMU's drainage pattern on and by the regional watershed; and

   d. Design capacity of the drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner that does not exceed the expected peak flow rate at the point of discharge as if the WMU were not constructed.

2. **SUBDRAIN.** The bottom liner system of the WMU shall be underlain by a dendritic array of subdrain collection trenches lined with 12-ounce geotextile and filled with gravel. The gravel shall be designed to prevent clogging over the service life of the subdrain system and protect the integrity of the liner system during the operating life, closure and post-closure maintenance period of the WMU. The Discharger shall collect and test subdrain effluents for waste constituents and manage the effluent in compliance with all applicable federal, state and local requirements.

3. **LINER MATERIALS.** Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the WMU.

4. **SLOPE STABILITY.** The following measures shall be implemented to maintain slope stability at the WMU:

   a. All landfill units, including the foundation, final slopes and containment systems, shall be designed and constructed to withstand the maximum credible earthquake (MCE) without damage to the foundation, waste containment structures, or to the structures which control leachate, surface drainage, erosion, or landfill gas.

b. All interim cut and/or fill slopes shall be designed, constructed and maintained to prevent adverse impacts upon the integrity or performance of the WMU's foundation, liner system, waste containment structures, or the structures which control leachate, surface drainage, erosion, or landfill gas.

c. The design of temporary cut and/or fill slopes shall be approved by a California registered civil engineer, or a certified engineering geologist [CCR Title 27 §20310(e)]. All temporary cut and/or fill slopes shall be designed, constructed and maintained to prevent slopes from adversely impacting the integrity or performance of the Unit's foundation, liner system, waste containment structures, or the structures which control leachate, surface drainage, erosion, or gas. All temporary slopes must comply with this specification throughout the range of weather and hydrogeological conditions experienced during the existence of the temporary slope.

d. The Discharger shall design, construct and maintain all containment structures so they are capable of containing wastes, waste constituents, and degradation products of wastes so as to prevent degradation of waters of the state, as a result of discharging waste into the WMU.

e. All final cut and fill slopes must be designed to have a minimum dynamic factor of safety of at least 1.5 or meet the alternative design requirements as required by CCR Title 27 §21750(f)(5).

f. The WMU slopes shall not exceed a horizontal-to-vertical ratio of 1.5:1, without benching, to ensure slope stability. Other areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.

5. **FOUNDATION/SUBGRADE.** The following measures shall be implemented to maintain the integrity of the foundation/subgrade of the WMU:

a. The WMU shall have a foundation or base capable of providing support for the structures and capable of withstanding hydraulic pressure gradients to prevent failure or settlement, compression, or uplift and all effects of ground motions resulting from the MCE as certified by either a registered civil engineer or a certified engineering geologist in accordance with CCR 27 §20240(d).

b. The subgrade shall be rolled to a smooth and level surface. The surface of the subgrade shall be free of stones greater than 0.5-inch in diameter, organics and other deleterious material.

6. **LINER SYSTEM.** The following measures shall be implemented to maintain the integrity of the liner system at the WMU:

   a. **The engineered alternative liner used for sideslope areas** (*e.g.*, "steep" sections with gradients greater than 5:1) shall consist of the components contained in Finding 10.a of this Order. The GCL component shall be installed in a manner that ensures complete long-term coverage, including a minimum overlap of at least 24-inches (2 feet) with adjacent GCL panels, regardless of the effects of shrinkage or stretching of the GCL panels. The geomembranes (both 60-mil and 80-mil) shall provide complete coverage on the surface of the underlying liner system component.

   b. **The engineered alternative liner used for the bottom of the WMU** (and slopes with gradients less than 5:1) shall consist of the components contained in Finding 10.a of this Order. The GCL component shall be installed in a manner that ensures complete long-term coverage, including an adequate overlap with adjacent GCL panels, regardless of the effects of shrinkage or stretching of the GCL panels. The geomembranes (both 60-mil and 80-mil) shall provide complete coverage on the surface of the underlying liner system component.

   c. Pursuant to CCR Title 27 §20330(d), the Discharger shall ensure that the required liner system covers all natural geologic materials that are likely to be in contact with waste (including landfill gas or leachate).

   d. The Discharger shall ensure that the junction(s) between the bottom liner system components and sideslope liner system components (at the base of the slopes), the junction between the sideslope liner system and the anchor trenches/tie-downs (at the top of slopes), and junctions between adjacent panels of geosynthetic materials are constructed in a manner that do not:

      (1) Provide a pathway for the migration and release of wastes, waste constituents, or degradation products (leachate, landfill gas, *etc.*), or

      (2) Cause, threaten to cause or contribute to adverse impacts upon: WMU's ability to contain waste constituents, the integrity and performance of the WMU's foundation, liner system, or the structures which control leachate, surface water drainage, erosion or gas.

e. Geomembranes used in the liner system shall meet the following minimum performance requirements:

(1). Be designed and constructed to contain the fluid, including landfill gas, waste and leachate as required by CCR Title 27 §20240 and §20310), and limit the infiltration of liquid, to the greatest extent possible;

(2). Control landfill gas emissions;

(3). Be stable under the range of stresses and ambient environmental conditions at the site; and

(4). Have a service life that extends throughout the post-closure maintenance period and for as long as the wastes pose a potential threat to water quality.

7. **CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL.** The following measures shall be implemented to ensure that Title 27 construction quality assurance/quality control requirements are achieved:

a. The WMU containment structures shall be designed and constructed by or under the direct supervision of a California registered civil engineer, or a certified engineering geologist [CCR Title 27 §20324(b)(1) and §20310(e)], and shall be certified by that individual as meeting the prescriptive standards (except where exempt or approved as an engineered alternative design herein) and performance goals of Title 27. In the case of an engineered alternative, the registered civil engineer or certified engineering geologist must certify that the WMU has been constructed in accordance with approved plans and specifications. All design documents shall include a Construction Quality Assurance Plan (CQA Plan), for the purpose of:

(1) Demonstrating that the WMU has been constructed according to the specifications and plans approved by the Regional Board; and

(2) Providing quality control on the material and construction practices used to construct the WMU and prevent the use of inferior products and/or materials that do not meet the approved design plans and specifications.

b. Hydraulic conductivity of soils used in containment structures, as determined through laboratory methods (CCR Title 27 §20320), shall be confirmed using applicable field-testing methods (CCR Title 27 §20324 *et seq.*) and the results shall be submitted to the

Regional Board in a final CQA Report prior to the placement of waste.

c. After completing installation of a geomembrane component and the LCRS gravel, or LCRS gravel and operations layer, the Discharger shall:

(1) Complete an electrical leak location survey (ELLS), using it to check the integrity of all bottom and sideslope areas covered by the geomembrane component,

(2) Take necessary steps to identify and repair all defects located in the geomembrane component, and

(3) Include the results from the ELLS and any repairs to the geomembrane in the relevant CQA report including: text discussions of field activities, daily logs of defect repairs, results from all testing performed to assess the integrity of patches/repairs made to the geomembrane, separate site plot plan indicating location(s) of all defects/repairs performed for each geomembrane layer – these site plot plans shall be made to the same scale to facilitate comparison between geomembrane layers, and supporting photographs- of all defective areas and repairs made to the geomembrane component.

d. The Discharger must provide the Regional Board with an acceptable CQA Report including a technical demonstration that the proposed sideslope liner design can be constructed and remain stable and functional on the interior cut slopes of the WMU.

e. A technically qualified third party, independent of both the Discharger and the construction contractor, shall perform all the construction quality assurance monitoring and testing during the construction of the liner system. The third party shall certify that the liner system was constructed in compliance with all applicable plans and engineering specifications.

8. **LEACHATE COLLECTION AND REMOVAL SYSTEM.** The following measures shall be implemented to ensure proper construction of the primary and secondary LCRS for the WMU:

a. All containment systems shall include a LCRS that shall effectively convey all leachate that reaches the liner, to a lined sump or other lined collection area.

b. Materials used to construct the primary LCRS and secondary LCRS shall have appropriate physical and chemical properties, and strength to ensure the required transmission of leachate/liquid over the operational life of the WMU and throughout the post-closure maintenance period.

c. The primary LCRS shall be designed, constructed, and maintained to collect twice the anticipated daily volume of leachate generated by the WMU, and to ensure that there is no buildup of hydraulic head on the underlying liner [per CCR Title 27 §20340(c)].

d. The secondary LCRS must be capable of detecting, collecting and removing leaks of waste constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. At a minimum, the Discharger shall ensure the secondary LCRS is:

(1) Constructed with a bottom slope of one percent or more,

(2) Constructed of granular drainage materials with a hydraulic conductivity of $1x10^{-2}$ cm/sec or more and a thickness of 9 inches (23 centimeters) or more;

(3) Constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated and of sufficient strength and thickness to prevent collapse under the pressure exerted by the overlying waste cover materials and equipment used at the landfill; and

(4) Constructed with sumps and liquid removal methods (e.g. pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method of measuring and recording the volume of liquids present in the sump and liquids removed.

e. The WMU shall be equipped with in-fill landfill gas extraction systems. Landfill gas shall also be removed from the primary LCRS and secondary LCRS when present at detectable levels.

9. OPERATIONS LAYER.

a. The Operations layer shall meet the following minimum requirements:

(1) Be free of debris, roots, scrap material, asphalt, concrete, vegetation, untreated refuse, and other deleterious, or objectionable material.

(2) Be comprised of gravel, sands, clays and/or silts and have a minimum lab permeability of 0.01 cm/s.

(3) May not contain asphalt, concrete, limestone or other material that could adversely react with landfill leachate.

b. A 12-ounce nonwoven geotextile fabric layer shall be installed over the primary LCRS gravel on the bottom, prior to placement of the operations layer.

10. **LANDFILL COVER.**

a. Units with intermediate cover (as defined in CCR Title 27 §20700), which have been/will be exposed for longer than two years from the time the intermediate cover was installed, shall have a minimum of two-feet of soil cover maintained over the landfill unit. All intermediate cover(s) shall be designed and constructed to minimize percolation of liquids through wastes pursuant to CCR Title 27 §20705.

b. The Discharger may use the following alternative daily covers (ADC) for the WMU, provided the use of ADC is approved by the LEA, and the use of that material does not create or contribute to conditions of pollution or nuisance:

(1) Geosynthetic blankets, or

(2) Processed green wastes.

c. The Discharger may propose the use of other ADC materials, pursuant to CCR Title 27 §20690 *et seq*. The Discharger must demonstrate that any proposed ADC materials meet the performance requirements of CCR Title 27 §20705(b) and the minimum requirements of CCR Title 27 §20705(e). The Regional Board and LEA must approve the use of any additional ADC, before the Discharger uses it at the Gregory Canyon Landfill.

F. FILL SPECIFICATIONS

1. The Discharger must fully implement the *Restoration and Enhancement Plan* prepared for Gregory Canyon Ltd. by URS, dated May 23, 2008.

2. The *Restoration and Enhancement Plan* must be consistent with Monitoring and Reporting Program No. R9-2008-017.

3. If mitigation areas do not meet their interim and/or ultimate success criteria, as defined within the *Restoration and Enhancement Plan*, the Discharger shall prepare remedial measures, acceptable to the Regional Board, to be fully implemented within one year following the determination that success criteria were not reached.

4. The Discharger shall provide certification no later than 10 days prior to the start of construction that personnel have been trained on the provisions and prohibitions of this Order as well as the management responsibilities detailed in each of the mitigation and monitoring plans.

5. Within 90 days of the issuance of this certification, the Discharger must provide the Regional Board a draft preservation mechanism (e.g. deed restriction, conservation easement, etc.) that will protect all mitigation areas and their buffers in perpetuity. Within one year of the issuance of this certification, the Discharger must submit proof of a completed preservation mechanism that will protect all mitigation areas and their buffers in perpetuity. Construction of the site must not be initiated until a completed preservation mechanism is received. The conservation easement, deed restriction, or other legal limitation on the mitigation property must be adequate to demonstrate that the site will be maintained without future development or encroachment on the site which could otherwise reduce the functions and values of the site for the variety of beneficial uses of waters of the U.S. that it supports. The legal limitation must prohibit, without exception, all residential, commercial, industrial, institutional, and transportation development, and any other infrastructure development that would not maintain or enhance the wetland and streambed functions and values of the site. The preservation mechanism must clearly prohibit activities that would result in soil disturbance or vegetation removal, other than the removal of non-native vegetation. Other infrastructure development to be prohibited includes, but is not limited to, additional utility lines, maintenance roads, and areas of maintained landscaping for recreation. The legal limitations shall be set forth in a land use covenant that indicates that the restrictions run with the land and may not be lifted without approval by the Regional Board and such covenant shall be recorded in the County of San Diego Recorder' s Office with notice to the Regional Board that it has been recorded.

6. The Discharger shall submit an as-built report within 60 days after complete installation of each restoration phase. The as-built report shall contain final grade and topography elevations, planted areas and palette.

7. The Discharger shall submit copies of all necessary approvals and/or permits for the project and mitigation projects from applicable government agencies, including, but not limited to, the California Department of Fish and Game, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers, prior to the start of clearing/grading.

G. CLOSURE AND POST-CLOSURE SPECIFICATIONS

1. The closure of the Gregory Canyon Landfill shall be in accordance with CCR Title 27 Chapter 3, Subchapter 5, Articles 1 and 2, §21710(d), and conducted by, or under the direct supervision of, a California registered civil engineer or certified engineering geologist.

2. At closure, the Gregory Canyon Landfill shall receive a final cover, which is designed and constructed to function with minimum maintenance, and consists of, at a minimum, a 2-foot thick foundation layer (which may contain waste materials), overlain by a 2-foot thick clay liner having a permeability of 1×10^{-6} cm/sec or less, overlain by a one-foot vegetation layer or an engineered equivalent final cover approved by the Regional Board pursuant to CCR Title 27 §20800(b) and (c).

3. At closure, the Gregory Canyon Landfill shall be graded to achieve a 3 percent grade on slopes and the cover shall be maintained to prevent ponding and infiltration.

4. Cover materials shall be graded to divert precipitation from the WMU, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation events with a return frequency specified in this Order. Any drainage layer in the final cover shall be designed and constructed to intersect with the final drainage system for the Unit in a manner promoting free drainage from all portions of the cover [per CCR Title 27 §20365(f)].

5. The post-closure maintenance period shall continue until the Regional Board determines that remaining wastes in the WMU no longer have the potential to threaten water quality [CCR Title 27 §20950(a)(1)].

6. Vegetation used at the site shall be selected to require minimum irrigation and maintenance, and shall not impair the integrity of the landfill cover or containment structures, and meet the requirements of CCR Title 27, §21090(a)(3)(A)(1).

7. The Discharger shall comply with all applicable requirements of CCR Title 27, Subchapter 5, Article 2 for Closure and Post-Closure maintenance of the Gregory Canyon Landfill.

H. PROVISIONS

1. **GENERAL PROVISION.** The wastes discharged at the **Gregory Canyon WMU** shall not cause or contribute to a condition of pollution, contamination, or nuisance, as defined by §13050 of the Water Code.

2. **DUTY TO COMPLY.** Any noncompliance with this Order constitutes a violation of the Water Code and is grounds for: (a) enforcement action and (b) termination, revocation and re-issuance, or modification of this Order.

3. **CORRECTIVE ACTION.** The Discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

4. **FINANCIAL ASSURANCES FOR CLOSURE, POST-CLOSURE AND CORRECTIVE ACTION.** Within **one year** of the effective date of this Order, the Discharger shall establish and maintain adequate and acceptable assurances of financial responsibility for closure, post-closure monitoring and maintenance, or implementation of corrective action in response to a release of waste constituents from the WMU.

   Initially, the Discharger shall establish financial assurances in the minimum amount of **$33,735,123**. The financial assurances shall cover the costs estimated for closure, post-closure maintenance, and corrective actions for reasonably foreseeable releases from the waste management units at the Gregory Canyon Landfill:

TASK	Estimated Cost	Source of Estimate
Closure	$20,681,897	JTD (2004) Volume 1, Page F.1-3
Post-Closure Maintenance and Monitoring	$8,219,910	JTD (2004), Volume 1, Page F.1-9
Corrective Actions for reasonably foreseeable releases	$4,833,316	JTD (2004), Volume 1, Page B.5-22
Total =	**$33,735,123**	

   The Discharger shall update the financial assurances, as necessary to ensure that adequate funds are available, to cover the cost of closure, post closure monitoring and maintenance, and corrective actions in response to a reasonably foreseeable release from the Gregory Canyon Landfill.

The Discharger shall ensure that their selected financial assurance instrument meets the following minimum criteria:

a. The financial assurance instrument names the Regional Board as beneficiary to ensure that funds are made directly available to the Regional Board upon a finding by the Regional Board that the Discharger has failed or refuses to implement closure, post-closure monitoring and maintenance, or conduct corrective actions in response to a release of waste constituents from the waste management unit.

b. The amount of the financial assurances are regularly updated, at least every five (5) years, to ensure that adequate funds can be made directly available to the Regional Board for implementation of closure, post-closure monitoring and maintenance, or corrective action.

When the Discharger notifies the Regional Board of a transfer of ownership (per **Provision H.7** and **Reporting Requirement I.7**), the notification shall include a proposed schedule for the succeeding owner to provide evidence of acceptable financial assurance responsibility to the Regional Board.

5. **PROPER OPERATION AND MAINTENANCE.** The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate laboratory and process controls including appropriate quality assurance procedures.

6. **REVISION OF WASTE DISCHARGE REQUIREMENTS.** This Order may also be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this Order;

b. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts;

c. A change in any condition that requires a temporary or permanent modification, reduction, or elimination of the authorized discharge; or

d. A material change in the discharge of wastes into the WMU.

The filing of a request by the Discharger for the modification, revocation and reissuance, or termination of this Order or notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

7. **CHANGE IN OWNERSHIP.** This Order is not transferable to any person except after notice to the Regional Board. The Regional Board may require modification or revocation and re-issuance of this Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the Water Code. The Discharger shall submit notice of any proposed transfer of this Order's responsibility and coverage under **Reporting Requirement I.7.** The Discharger shall also inform the transferee of the status of the Dischargers' annual fee account.

8. **PROPERTY RIGHTS.** This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the Discharger from liability under federal, State, or local laws, nor create a vested right for the owner and operator to continue the regulated activity.

9. **ENTRY AND INSPECTION.** Under the authority of Water Code section 13267, the Discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

   a. Enter upon the Discharger premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order;

   d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the Water Code, any substances or parameters at any location; and

   e. To photograph or videotape any structures, facilities, activities, or other conditions that could result in adverse impacts to water quality and that are pertinent to compliance with this Order.

10. **REPOSITORY FOR WASTE DISCHARGE REQUIREMENTS.** A complete and correct copy of this Order shall be maintained at the facility, and shall be available to operating personnel at all times.

11. **SEVERABILITY.** The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

12. **REPLACEMENT WATER FOR WATER SUPPLY WELLS.** In the event of a release of waste constituents and/or waste degradation products from the WMU that affects beneficial uses of groundwater, the Discharger shall provide replacement water to all affected private and public well owners, and to all affected parties. The replacement water provided shall meet all applicable federal, State, and local drinking water standards, and shall have comparable quality to that pumped by the public water system or private well owner prior to the discharge of waste. The Discharger shall provide the Regional Board with a Water Replacement Contingency Plan **within 1 year** of completing construction of the waste containment features for Phase 1 of the WMU.

    Within **90-days** of determining that there has been a release of waste constituents or waste degradation products from the WMU, the Discharger shall amend the Water Replacement Contingency Plan to include:

    a. An updated list of local private and public well owners.

    b. A Public Participation Plan, including the following elements:

        (1) Methods to identify interested parties (including private parties, public agencies, and environmental groups), and to maintain an interested parties list to facilitate public participation.

        (2) Proposed methods and procedures to ensure adequate public notification of the release.

        (3) Proposed plans to inform and involve the public during the investigation of the nature and extent of the release and implementation of corrective actions.

        (4) Schedule for reporting implementation of public notification and public participation tasks to the Regional Board and updating the operating record for the facility.

    c. Proposed methods and schedules for:

(1) Testing potentially affected private and public water supply wells for waste constituents detected in the release.

(2) Identification of preferred methods to provide replacement water, including evaluation of importation of potable water, installation and maintenance of wellhead treatment systems, and other methods to provide affected parties with replacement potable water supplies.

(3) Reporting implementation of water replacement contingency actions to the Regional Board and updating the operating record for the facility.

13. **DISCHARGE OF DECOMMISSIONED MATERIALS.** A moratorium on the disposal of material from decommissioned sites into Class III and unclassified waste management units is established under Executive Order D-62-02. This moratorium shall remain in effect until both of the following conditions are satisfied:

a. Department of Public Health completes its assessment of the public health and environmental safety risks associated with the disposal of decommissioned materials and its regulations setting dose standards for decommissioning take effect; and,

b. The Regional Board rescinds Cleanup and Abatement Order No. R9-2002-0330.

14. **HAZARDOUS SUBSTANCES.** Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes of permits any hazardous substance, or sewage to be discharged in or on any waters of the state, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the state, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Office of Emergency Services, the SWRCB or the Regional Board. This provision does not require reporting of any discharge of less than a reportable quantity as provided under §13271 subdivision (f) and (g), of the Water Code, unless the Discharger is in violation of a prohibition in the applicable Water Quality Control Plan [Water Code §13271(a)]. This provision does not authorize a violation of the Clean Water Act section 301 or Water Code section 13260.

15. **PETROLEUM RELEASES.** Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes of permits any petroleum

product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Office of Emergency Services, the SWRCB or the Regional Board. This provision does not require reporting of any discharge of less than 42 gallons, unless the discharge must be reported pursuant to §311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan [Water Code §13272]. This provision does not authorize a violation of the Clean Water Act section 301 or Water Code section 13260.

16. **HAZARDOUS WASTE EXCLUSION PROGRAM.** The Discharger shall implement a hazardous waste exclusion program pursuant to CCR Title 27 §20870 and CFR Title 40 §258.20, and comply with any additional load inspection requirements imposed by the LEA with jurisdiction over the facility.

17. **SECTION 401 WATER QUALITY CERTIFICATION.**

a. Every certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code §13330 and CCR Title 23 §3867.

b. Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to CCR Title 23 §3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

c. Certification is conditioned upon total payment of any fee required pursuant to CCR Title 23 §3833 and owed by the Discharger.

d. The Discharger must, at all times, fully comply with the engineering plans, specifications and technical reports submitted to the Regional Board, to support this 401 Water Quality Certification and all subsequent submittals required as part of this certification. The conditions within this certification must supersede conflicting provisions within such plans submitted prior to the certification action. Any modifications thereto, would require notification to the Regional Board and reevaluation for individual WDRs and/or certification amendment.

e. The Discharger must, at all times, maintain appropriate types and sufficient quantities of materials onsite to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the U.S. and/or state.

f. In response to a suspected violation of any condition of this certification, the Regional Board may require the holder of any permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the Regional Board deems appropriate, provided that the burden, including costs, of the reports must bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

g. In response to any violation of the conditions of this certification, the Regional Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

h. Any proposed change in construction that may alter flow patterns and/or change the approved impact footprint is prohibited without Regional Board approval. Not later than 30 days prior to the beginning of any proposed change, the Discharger shall submit, acceptable to the Regional Board, detailed plans and specifications showing the proposed change in relationship to the approved project.

i. Discharges of concentrated flow during construction or after completion must not cause downstream erosion or damage to properties or stream habitat.

j. Water containing mud, silt, or other pollutants from equipment washing or other activities, must not be discharged to waters of the U.S. and/or the state or placed in locations that may be subjected to storm flows. Pollutants discharged to areas within a stream diversion area must be removed at the end of each work day or sooner if rain is predicted.

k. All surface waters, including ponded waters, must be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. Diversion activities must not result in the degradation of beneficial uses or exceedance of water quality objectives of the receiving waters. Any temporary dam or other artificial obstruction constructed must only be built from materials such as clean gravel which will cause little or no siltation.

Normal flows must be restored to the affected stream immediately upon completion of work at that location.

l. All areas that will be left in a rough graded state must be revegetated with native species no later than one week after completion of grading. The revegetation palette must not contain any plants listed on the California Invasive Plant Council Invasive Plant Inventory, which can be found online at http://www.cal-ipc.org/ip/inventory/weedlist.php.

m. All surface waters of the U.S. and state that are to be preserved shall be fenced no less than 10 days prior to the start of any project activities. A qualified biologist shall show all preservation areas to all appropriate construction personnel and shall explain the conditions of this Order and other permits regarding impacts.

n. The Discharger shall staff a qualified biologist on site during project construction to ensure compliance with the certification requirements. The biologist shall be given the authority to stop all work onsite if a violation occurs or has the potential to occur. No later than 30 days prior to the start of the project, the Discharger shall submit, acceptable to the Regional Board, the name(s) and qualification(s) of the qualified biologist(s) (defined as possessing a college degree in the biological sciences and at least 5 years restoration experience in southern California) responsible for compliance with the requirements of this Order.

o. The Discharger shall notify the Regional Board in writing at least 15 days prior to actual start dates for each project component (e.g., bridge construction, grading and filling Gregory Canyon Creek, installation of mitigation, etc.).

p. This Certification is valid only until the expiration of the associated U.S. Army Corps of Engineers Clean Water Act §404 individual and/or Nationwide permit.

18. **MITIGATION.**

a. The Discharger must fully implement the *Restoration and Enhancement Plan* prepared for Gregory Canyon Ltd. by URS, dated May 23, 2008.

b. The Restoration and Enhancement Plan must be consistent with Monitoring and Reporting Program No. R9-2009-0004.

c. The proposed mitigation must commence before impacts to waters of the State occur, and be completed no later than 9 months following the initial discharge of waste into waters of the State. Delays in implementing mitigation must be compensated by increased mitigation of 0.01-acre for each day of delay of commencement or completion.

d. The Discharger must notify the Regional Board in writing at least **5 days prior** to the actual commencement of mitigation installation, and completion of mitigation installation.

e. If mitigation areas do not meet their interim or ultimate success criteria (once established), as defined within the *Restoration and Enhancement Plan*, the discharger shall prepare remedial measures, acceptable to the Regional Board, to be fully implemented within one year following the Regional Board's determination that success criteria were not reached.

f. The Discharger shall provide certification no later than **5 days prior** to the start of construction that personnel have been trained on the provisions and prohibitions of this Order as well as the management responsibilities detailed in each of the mitigation and monitoring plans.

g. No later than **60 days following** the completion of the installation of the mitigation areas, the discharger shall submit final conservation easements or deed restrictions for all mitigation and preservation areas.

h. The Discharger shall submit an as-built report within **60 days after** complete installation of each restoration phase. The as-built report shall contain final grade and topography elevations, planted areas and palette.

i. During the mitigation monitoring and maintenance phase, mitigation areas must be maintained free of perennial exotic plant species including, but not limited to, pampas grass, giant reed, tamarisk, sweet fennel, tree tobacco, castor bean, and pepper tree. Annual exotic plant species must not occupy more than 5 percent of the mitigation areas.

j. If at any time during the implementation and establishment of the mitigation area(s), and prior to verification of meeting success criteria, a catastrophic natural event (e.g., fire, flood) occurs and impacts the mitigation area, the Discharger is responsible for repair and replanting of the damaged area(s).

k. For the purpose of determining mitigation credit for the removal of exotic/invasive plant species, only the actual area occupied by exotic/invasive plant species must be counted to comply with mitigation requirements.

l. For purposes of this Order and Certification, creation is defined as the creation of vegetated or unvegetated waters of the U.S./State where they have never been documented or known to occur (e.g., conversion of nonnative grassland to freshwater marsh). Restoration is defined as the creation of waters of the U.S./State where they previously occurred (e.g., removal of fill material to restore a drainage). Enhancement is defined as modifying existing waters of the U.S./State to enhance functions and values (e.g., removal of exotic plant species from jurisdictional areas and replacing with native species).

19. **DISCHARGES TO NAVIGABLE WATERS.** Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill materials subject to §404 of the Clean Water Act and discharges subject to a general NPDES permit) must file an NPDES permit application with the Regional Board.

20. **EFFECTIVE DATE.** This Order becomes effective on the date of adoption by the Regional Board provided that the Regional Board has been notified [pursuant to CCR Title 27 §21720(d)] of all requisite approvals from all local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved use of the site for discharges of waste to land.

I. REPORTING REQUIREMENTS

1. **REPORT OF WASTE DISCHARGE/JOINT TECHNICAL DOCUMENT AMENDMENT.** The Discharger shall file a new Report of Waste Discharge/amendment to the Joint Technical Document at least 120 days prior to the following:

a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;

b. A significant change in the disposal method, location or volume (*e.g.*, change from land disposal to land treatment);

c. A change in the type of waste being accepted for disposal;

d. The addition of a major industrial waste discharge to a discharge of essentially domestic waste, or the addition of a new process or product by an industrial facility resulting in a change in the character or type of waste being discharged;

e. Any planned change in the regulated facility or activity, which may result in noncompliance with this Order.

f. As required for implementation of an Evaluation Monitoring Program (pursuant to CCR Title 27 §20425) and/or for a Corrective Action Program (pursuant to CCR Title 27 §20430).

2. **GENERAL REPORTING REQUIREMENT.** The Discharger shall furnish to the Regional Board, within a reasonable time, any information which the Regional Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish, upon request by the Regional Board, copies of records required by this Order.

3. **PRELIMINARY DESIGN REPORT.** At least 120 days prior to the beginning of construction for each new construction phase, a preliminary Design Report shall be submitted to Regional Board and shall include, but not limited to, the engineered design plans, engineering specifications, and descriptions for all liners and other containment structures, leachate collection and removal components, leak detection system components, precipitation and drainage control facilities, interim covers, and description of ancillary facilities, and all information pursuant to CCR Title 27 §21760(a)(1).

4. **FINAL CONSTRUCTION REPORT.** A final construction report shall be submitted to the Regional Board after each phase of construction and prior to the discharge of waste into the constructed cell. At a minimum, the final construction report shall include the following components:

   a. Final Design Report, including but not be limited to, as-built plans, specifications, and descriptions for all liners and other containment structures, LCRS components, leak detection system components, precipitation and drainage control facilities, interim covers, and description of ancillary facilities pursuant to CCR Title 27 §21760(a)(1).

   b. Final Construction Quality Assurance (CQA) Report with a written summary of the CQA program and all test results, analyses, and copies of the inspector's original field notes, and a certification as described in CCR Title 27, §20324 *et seq.*

5. **SIGNIFICANT MAINTENANCE ACTIVITY WORKPLAN.** The Discharger shall submit a workplan prior to any significant maintenance activities that

could alter existing surface drainage patterns or change existing slope configurations. These activities may include, but not be limited to, significant grading activities, the importation of fill material, the design and installation of soil borings, groundwater monitoring wells, and other devices for site investigation purposes. Unless otherwise directed by the Regional Board, the Discharger may initiate the activities proposed in the workplan after expiration of thirty (30) days of compliance with this Reporting Requirement, unless otherwise directed in writing by this Regional Board.

6. **ON-SITE RECORD KEEPING**. The Discharger must retain and have available for review by this Regional Board during normal business hours at a location at or near the WMU the following documents and records:

   a. Inspection records, training procedures, and notification procedures required by this Order and CFR Title 40 §258.20;

   b. Any WMU design documentation for placement of leachate or gas condensate as authorized by this Order and CFR Title 40 §258.28(a)(2);

   c. Any demonstration, certification, finding, monitoring, testing, or analytical data as required by this Order, CCR Title 27, and CFR Title 40 Subpart E §258.50 *et. seq.*;

   d. Closure and post-closure care plans and any monitoring, testing, or analytical data as required by this Order, CCR Title 27 and CFR Title 40 §258.60 and §258.61;

   e. Any cost estimates and financial assurance documentation required by this Order, CCR Title 27, and CFR Title 40 Subpart G §258.70 *et. seq.*;

   f. Certifications from the generator that the analyses submitted are representative of the material to be disposed;

   g. Analytical data or Material and Safety Data Sheets representing the waste stream;

   h. The Chain-of-Custody form showing the sample's integrity was not compromised;

   i. The approximate volume (in cubic yards) of the waste(s) and the transporter information;

   j. Documentation that, the Discharger obtain authorization, when required, for the discharge of solid wastes, containing elevated

concentrations of selected metals (lead, copper, or nickel) through a variance issued by the DTSC and a Solid Waste Facility Permit from the LEA [pursuant to California Health and Safety Code §25157.8(a)] or other applicable statutory requirements;

k. Any information required by CFR Title 40, Part 258 §258.29(a)(4) [placement of leachate or landfill gas condensate as allowed by CFR Title 40, Part 258, §258.28(a)(2) and this Order], §258.29(a)(6) [closure and post-closure plans and monitoring, testing, or analytical data as required by CFR Title 40, Part 258, §258.60 and §258.61], and §258.29(a)(7) [any cost estimates and financial assurance documentation required by CFR Title 40, Subpart G];

l. Notifications from the Discharger required pursuant to CCR Title 27 §21710(a)(4) and §21710(c), and this Order;

m. Records required to be kept in compliance with CCR Title 27 §21710(f); and

n. The JTD and any amendments thereto prepared pursuant to CCR Title 27 §21585(a)(4); and any additional records and certifications required to be kept in compliance with this Order.

Any other information that is necessary to comply with CFR Title 40, Part 258, CCR Title 27, and this Order, notify the Regional Board **within 14 days** of updating the information in the Operating Record for the facility.

7. **CHANGE IN OWNERSHIP.** The Discharger shall notify the Regional Board, in writing, at least **30 days** in advance of any transfer of this Order's responsibility and coverage between the current owner and new owner for construction, operation, closure, or post-closure maintenance of a landfill. This agreement shall include an acknowledgement that the existing owner is liable for violations up to the date of transfer of ownership and that the new owner is liable after the date that ownership of the property transfers. The agreement shall include an acknowledgement that the new owners shall accept responsibility for compliance with this Order, including obtaining such financial assurances as the State may require, for implementation of closure and post-closure maintenance/monitoring for the WMU.

8. **INCOMPLETE REPORTS.** Where the Discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information. The Discharger shall notify the Regional Board of any changes in information submitted to the Regional Board under the

applicable SWRCB-promulgated requirements of CCR Title 27 [pursuant to CCR Title 27 §21710(a)(4].

9. **ENDANGERMENT OF HEALTH AND ENVIRONMENT.** The Discharger shall report any noncompliance, which may endanger human health or the environment. Any such information shall be provided orally to the Regional Board **within 24 hours** from the time the owner becomes aware of the circumstances. A written submission shall also be provided **within five days** of the time the owner becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, or prevent recurrence of the noncompliance. The Regional Board, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24-hours.

10. **NOTIFICATION OF SLOPE FAILURE.** The Discharger shall notify the Regional Board immediately, upon a determination that a slope failure is occurring or has occurred at the facility. The Discharger shall promptly repair any slope failure that affects or threatens the integrity or the performance of the foundation, liner system, waste containment structures, or the structures which control leachate, surface drainage, erosion or gas at the WMU. Any temporary slope, constructed as part of an engineering measure to mitigate slope stability, must comply with requirements in **Landfill Construction Specifications E.4.b, E.4.c and E.4.f** of this Order.

11. **NOTIFICATION OF SEEPAGE.** The Discharger shall immediately report by telephone or e-mail a discovery of any previously unreported seepage of liquid from any active, inactive, or closed WMU at the Gregory Canyon Landfill and shall comply with reporting requirements in **Section G of Monitoring and Reporting Program No. R9-2008-017.**

12. **NOTIFICATION OF LEACHATE PRODUCTION CHANGE.** The Discharger shall notify the Regional Board within **seven days** if fluid is detected in a previously dry LCRS (including the secondary LCRS in the liner system), or unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in a LCRS [CCR Title 27 §21710(c)(3)].

13. **NOTIFICATION OF CLOSURE.** The Discharger shall notify the Regional Board that the WMU is to be closed and provide such notice either at the same time as the California Integrated Waste Management Board (pursuant to CCR Title 27 §21110) or **180 days** prior to beginning final closure activities (for the entire Unit or portion thereof), whichever is

sooner. The Discharger shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable federal and State regulations. The Discharger shall notify the Regional Board within 30 days of completing all closure activities for a Unit, or portion thereof, in the case of incremental closure under CCR Title 27 §21090(b)(1)(D). The Discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations. The Discharger shall certify that closed units shall be maintained in accordance with an approved post-closure maintenance plan.

14. **NOTIFICATION OF MATERIAL CHANGE.** Any proposed material change in operation shall be reported to the Regional Board at least 30 days in advance of the proposed implementation of any change. This shall include, but not be limited to, all significant new soil disturbances, all proposed expansion of development, or any change in drainage characteristics at the project site. For the purpose of this Order, this includes any proposed change in the boundaries of the wetland/surface waters of the U.S. fill sites.

15. **SECTION 401 WATER QUALITY CERTIFICATION REPORTING.**

    a. The Discharger shall submit copies of all necessary approvals and/or permits for the project and mitigation from applicable government agencies, including, but not limited to, the California Department of Fish and Game, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers, prior to the start of clearing/grading.

    b. The Discharger must submit Geographic Information System (GIS) shape files of the impact and mitigation areas within 30 days of project impacts and the mitigation area within 30 days of mitigation installation. All impact and mitigation areas shapefiles must be polygons. Two global positioning system (GPS) readings (points) must be taken on each line of the polygon and the polygon must have a minimum of 10 points. GIS metadata must also be submitted.

    c. The Discharger must submit a report to the Regional Board within 30 days of completion of the project. The report should include as-built drawings no bigger than 11" x 17" and photos of the completed project including post-construction BMPs.

16. **MONITORING AND REPORTING PROGRAM.** The Discharger shall comply with the attached **Monitoring and Reporting Program No. R9-2009-0004.** The Regional Board issues this Monitoring and Reporting Program (MRP) pursuant to Water Code section 13267 and CCR Title 27,

Chapter 2. Failure to comply with this MRP may subject the Discharger to civil liability pursuant to Water Code section 13268.

17. **MONITORING WELLS.** The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the California Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with Monitoring and Reporting Program No. R9-2009-004, as required by §13750 through §13755 of the Water Code.

8 **REPORT DECLARATION.** All applications, reports, or information submitted to the Regional Board shall be signed and certified as follows:

a. The Report of Waste Discharge/amendment to the Joint Technical Document shall be signed as follows:

(1) **For a corporation** – by a principal executive officer of at least the level of vice president.

(2) **For a partnership or sole proprietorship** – by a general partner or the proprietor, respectfully.

(3) **For a municipality, state, federal, or other public agency** – by either a principal executive officer or ranking elected official.

b. All other reports required by this Order and other information required by the Regional Board shall be signed by a person designated in paragraph (a) of this provision, or by a duly authorized representative of that person. An individual is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (a) of this provision;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and

(3) The written authorization is submitted to the Regional Board.

c. Any person signing a document under this Order shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

d. **Duty to Use Registered Professionals**. Pursuant to CCR Title 27 §21710(d), any report submitted in compliance with CCR Title 27 and this Order, which proposes a design or design change (or which notes occurrences) that might affect the WMU's containment features or monitoring systems shall be approved by a registered civil engineer or a certified engineering geologist appropriately licensed by the State of California.

The Discharger shall provide documentation that plans and reports required under this Order are prepared by or under the direction of, appropriately qualified professionals. CCR Title 27 §20324(b) and §21090(b)(1)(C); and California Business and Professions Code §6735, §7835 and §7835.1 all require that engineering and geologic evaluations and judgments be performed by or under the direction of registered professionals. A statement of qualifications and registration numbers of the responsible lead professionals shall be included in all plans and reports submitted by the Discharger. The lead professional shall sign and affix their registration stamp to the report, plan or document.

19. **REGIONAL BOARD ADDRESS.** The Discharger shall submit all paper copies of reports and notifications required under this Order and other information requested by the Regional Board to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

J. NOTIFICATIONS

1. PENALTIES FOR INVESTIGATION, MONITORING OR INSPECTION VIOLATIONS.

a. **Enforcement Discretion.** The Regional Board reserves its right to take any enforcement action authorized by law for violations of the terms and conditions of this Order.

b. **Enforcement Notification.** The Water Code §13268 provides that any person failing or refusing to furnish technical or monitoring program reports, as required by the Regional Board, or falsifying any information provided in the monitoring reports is guilty of a misdemeanor. Under those conditions, the Regional Board may administratively impose a civil liability of up to 1,000 dollars per day of the violation.

The Water Code commencing with Chapter 5, Enforcement and Implementation, §13350 provides that:

i. Any person who in violation of any waste discharge requirement, waiver condition, certification, or other order or prohibition issued or reissued, or amended by a Regional Board, discharges waste, or causes or permits waste to be deposited where it is discharged, into the waters of the state;

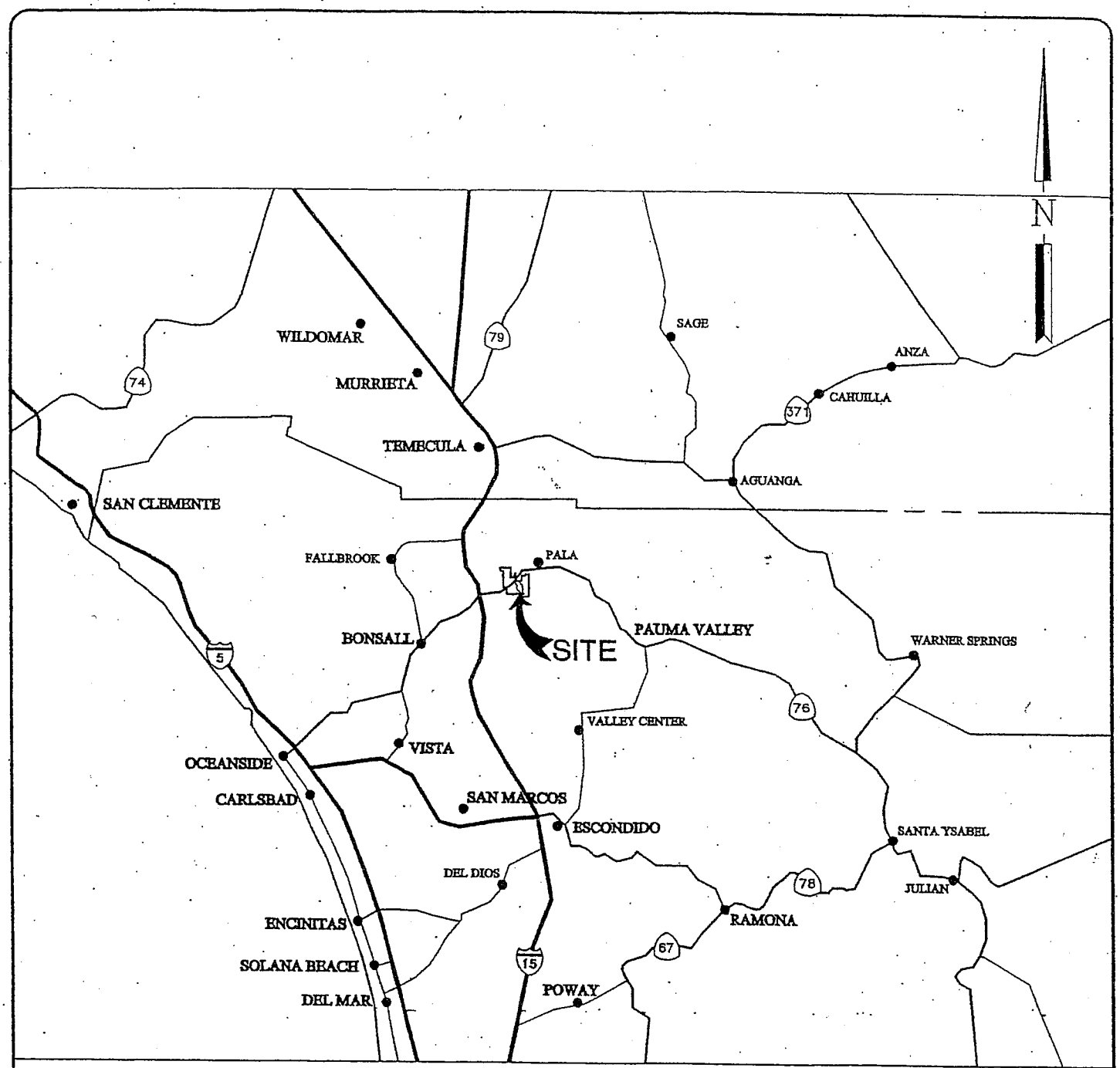
ii. Any person who, without regard to intent or negligence, causes of permits any hazardous substance to be discharged in or on any of the waters of the state, except in accordance with waste discharge requirements or other provisions of this division, shall be strictly liable civilly in accordance with §13350(d) or §13350(e); or

iii. Persons i n violation of Water Code §13350 may be assessed administrative civil liability by the Regional Board for violating a cleanup and abatement order in an amount not to exceed $5,000 for each day the violation occurs, or on a per gallon basis, not to exceed $10 for each gallon of waste discharged. Alternatively the court may impose civil liability in an amount not to exceed $15,000 for each day the violation occurs, or on a per gallon basis, not to exceed $20 for each gallon of waste discharged. Water Code §13308, provides that if there is a threatened or continuing violation of a cleanup and abatement order, the Regional Board may issue a Time Schedule Order prescribing a civil penalty in an amount not to exceed $10,000 per day for each day compliance is not achieved in accordance with that time schedule.

2. **CCR TITLE 27 DEFINITIONS.** Definitions of terms used in this Order shall be as set forth in the CCR Title 27 §20164.

I, John H. Robertus, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on _____.

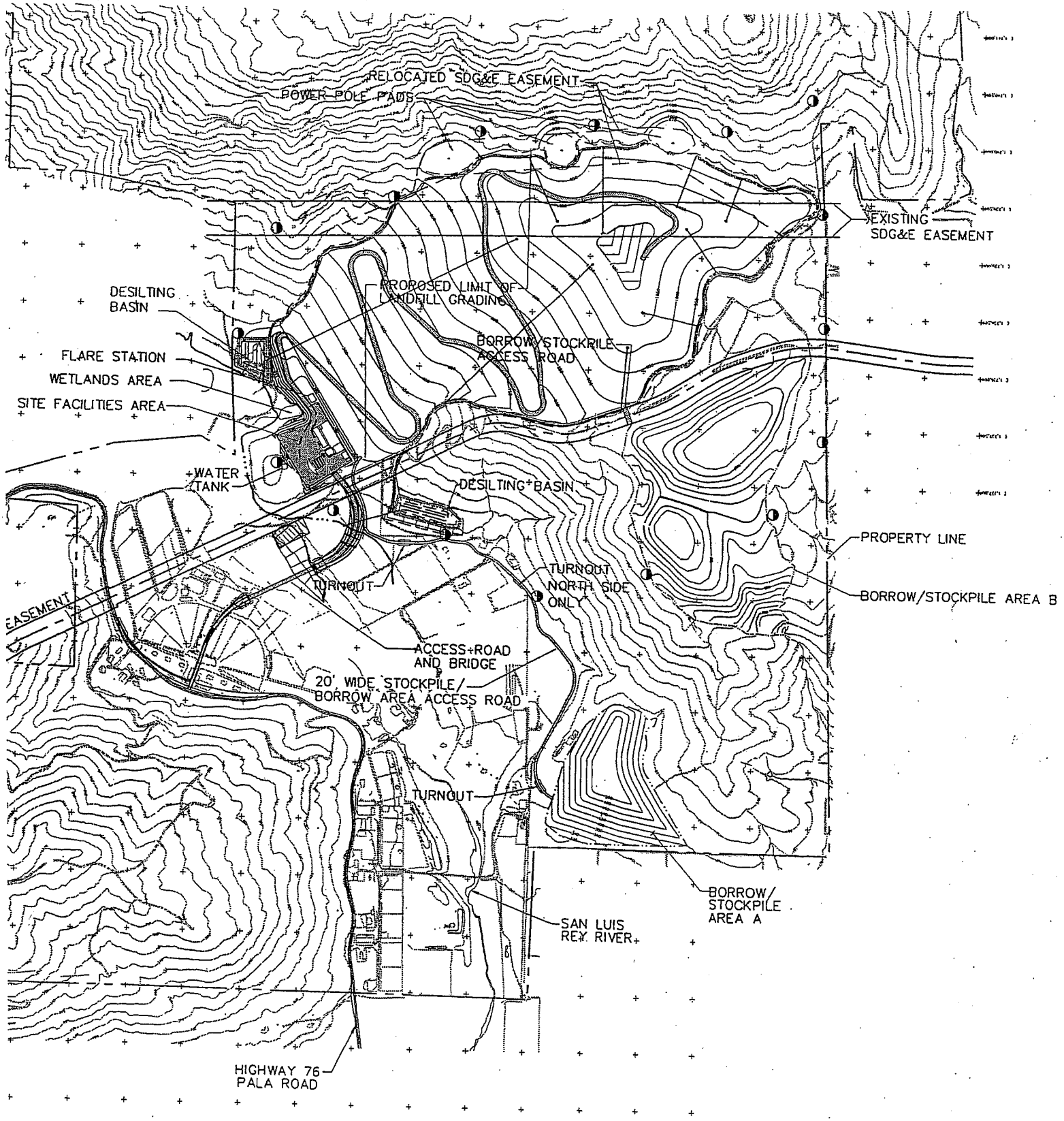
TENTATIVE
JOHN H. ROBERTUS
Executive Officer



VICINITY MAP

NTS

Attachment No. 1 to
Order No. R9-2009-004



Attachment No. 2 to
Order No. R9-2009-004

ATTACHMENT NO. 3 TO
ORDER NO. R9-2009-0004

Table 1. Maximum Concentration Limits for Soils Containing Nonhazardous Concentrations of Metals, Pesticides, Organic and Inorganic Compounds. (Reference: CCR title 22, Section 66261.24 as Amended).

Contaminant (CAM 17*)	Maximum Concentration Limits STLC**
Antimony	15 mg/l
Arsenic	5.0 mg/l
Barium	100 mg/l
Beryllium	0.75 mg/l
Cadmium	1.0 mg/l
Chromium	5.0 mg/l
Cobalt	80 mg/l
Copper	25 mg/l
Lead	5.0 mg/l
Mercury	0.2 mg/l
Molybdenum	350 mg/l
Nickel	20 mg/l
Selenium	1.0 mg/l
Silver	5.0 mg/l
Thallium	7.0 mg/l
Vanadium	24 mg/l
Zinc	250 mg/l
Contaminant	**STLC**
Aldrin	0.14 mg/l
Chlordane	0.25 mg/l
DDT, DDE, DDD	0.1 mg/l
2,4-Dichlorophenoxyacetic acid	10 mg/l
Dieldrin	0.8 mg/l
Dioxin (2,3,7,8-TCDD)	0.001 mg/l
Endrin	0.02 mg/l
Heptachlor	0.47 mg/l
Kepone	2.1 mg/l
Lead compounds, organic	-
Lindane	0.4 mg/l
Methoxychlor	10 mg/l
Mirex	2.1 mg/l
Pentachlorophenol	1.7 mg/l
Polychlorinated biphenyls (PCBs)	5.0 mg/l
Toxaphene	0.5 mg/l
Trichloroethylene	204 mg/l
2,4,5-Trichlorophenoxypropionic acid	1.0 mg/l

*California Metals 22 CCR Section 66261.24
** STLC - Soluble threshold Limit Concentration

ATTACHMENT NO. 4 TO
ORDER NO. R9-2009-0004

Table 2. Maximum Concentration Limits for Soils Containing Nonhazardous Concentrations of Metals, Pesticides, Organic and Inorganic Compounds using toxicity Characteristic Leaching Procedure (TCLP) analysis. (Reference: CCR Title 22 Section 66261.24 as Amended).

Contaminant	Maximum Concentration Limits Regulatory Level
Arsenic	5.0 mg/l
Barium	100 mg/l
Benzene	0.5 mg/l
Cadmium	1.0 mg/l
Carbon tetrachloride	0.5 mg/l
Chlordane	0.03 mg/l
Chlorobenzene	100 mg/l
Chloroform	6.0 mg/l
Chromium	5.0 mg/l
o-Cresol	200 mg/l
m-Cresol	200 mg/l
p-Cresol	200 mg/l
Cresol, total	200 mg/l
2,4-D	10 mg/l
1,4-Dichlorobenzene	7.5 mg/l
1,2-Dichloroethane	0.5 mg/l
1,1-Dichloroethylene	0.7 mg/l
2,4-Dinitrotoluene	0.13 mg/l
Endrin	0.02 mg/l
Heptachlor (and its epoxide)	0.008 mg/l
Hexachlorobenzene	0.13 mg/l
Hexachlorobutadiene	0.5 mg/l
Hexachloroethane	3.0 mg/l
Lead	5.0 mg/l
Lindane	0.4 mg/l
Mercury	0.2 mg/l
Methoxychlor	10 mg/l
Methyl ethyl ketone	200 mg/l
Nitrobenzene	2.0 mg/l
Pentachlorophenol	100 mg/l
Pyridine	5.0 mg/l
Selenium	1.0 mg/l
Silver	5.0 mg/l
Tetrachloroethylene	0.7 mg/l
Toxaphene	0.5 mg/l
Trichloroethylene	0.5 mg/l
2,4,5-Trichlorophenol	400 mg/l
2,4,6-Trichlorophenol	2.0 mg/l
2,4,5-TP (Silvex)	1.0 mg/l
Vinyl Chloride	0.2 mg/l